494 Because of the limited supply of gasoline and the minimal domestic production of motor vehicles, the cost of motor transportation is comparatively high in China. But in the coastal regions of East China, where imported fuel is available, the cost may be somewhat lower than in the interior provinces. Large-scale development of motor transportation is still remote. Motor transportation (including short-haul passenger service) is used only in those regions where neither rail nor water transportation are available.

III. INLAND WATER ROUTES

505 487 Water transporation, especially coastal shipping, plays a very important role in East China. Four of the five provinces have coastlines and important seaports. There are two major navigable rivers, the Yangtze River and the Yellow River; other rivers, including the Hwai and the Min, and many smaller streams are navigable by small steamers and junks. Some of the more important navigable rivers are listed in the following table:

497 railways (exclusive of Manchuria).* The role of railways in the growth of Shanghai has clearly been minor, and they have never become large volume carriers on a Western scale, despite their connections with most of the several large cities in the delta, and despite the relatively great agricultural and industrial productivity of the lower Yangtze basin.

491 The highway pattern is also relatively little developed. Two roads run south from Shanghai to Hangchow (both opened to traffic in 1932), and one runs north to Nanking. A large proportion of the highway mileage runs beside the railway lines, which makes the highways less useful than if they ran independently of or as feeders for the railways. The northern and southern highway routes are joined by a road from Kashing to Soochow, but the few remaining roads are either short-distance feeders or dead ends. There is no direct road connection between the major cities of Soochow and Wusih or Nanking. With minor exceptions in the vicinity of Shanghai, none of these surfaces were paved, and nearly all of the mileage is two-lane only.

494 The paucity of roads is presumably not due either to construction difficulties or to lack of general trade volume, although level ground in this area is usually accompanied by a dense network of natural and artificial waterways over which bridges must be built. The roads were constructed primarily for tourists and for general automobile travel rather than for commercial haulage. At least two of the major links (the shore road from Hangchow to Shanghai and the northern road from Shanghai to Soochow) were legally closed to vehicles over three tons gross weight from the time of their construction.[3] Due partly to the high cost of fuel, trucks, and parts, and partly to the generally pre-industrial nature of the economy, the volume of truck haulage on all of these roads has remained slight.[4]

505 Within the delta, however, and within most of the Yangtze basin, goods can move so easily and cheaply by water that there is little

496 * The total length of railways in China proper in 1936 was 9,712 kilometers, of which the two lines discussed above accounted for 753 kilometers (including sidings, loops, branches, and 112 kilometers of second track in and on the outskirts of Shanghai, Nanking, and Hangchow), or 8.3 per cent.[2]

2: Murphy G-4 (no date) 1953 AF15 East China AF15

city long after tea and silk had lost their commanding positions. The import of opium into China was legally abolished in 1917 by the terms of an international convention (see below, Chapter Eight), and it disappeared from customs figures at that time. But it was clearly still a powerful generator of capital and trade in the Shanghai of the 1930's. Opium also became a highly profitable export from Shanghai once its import had been officially banned, though as a then wholly illegal trade its volume and mechanics can only be guessed at.*

It also appears likely that the activities of Chinese opium merchants and distributors during the period from about 1800 to about 1870 helped to pioneer the commercialization and integration of the China market for sales of foreign goods, and that the later rapid spread of merchandizing, especially from Shanghai, was in some measure due to this earlier development of the techniques of commercial exploitation. Concurrently, opium continued to flow into Shanghai for domestic marketing and even for export, a trade which under the circumstances was increasingly profitable.

Tea and Silk

However, it was the trade in tea and silk, the two dominant staples of China's export trade until the close of the nineteenth century (table I), whose contribution to the commercial growth of Shanghai is clearest. The city's original near-monopoly as a result of the concentration of tea and silk production in or near the delta was further implemented by the opening of the Yangtze and its ports by the Treaty of Tientsin.

Transport costs for tea and silk by overland routes were high, averaging during the 1860's and 1870's 13 taels per bale of silk (approximately six bales to the ton), and 12 taels per hundred chests of tea (approximately 100 chests to the ton), for 200 miles. Taking the tael at this period as equivalent to about 6s 2d, these rates work out at about £24 per ton of silk (US$.56 per ton/mile), and £21 per ton of tea (US$.50 per ton/mile), as compared with

* See R. d'Auxion de Ruffe, *La Farce de l'Opium* (Paris, 1939), for a somewhat bitter *ad hominem* account of opium smoking and the opium trade in Shanghai, against the background of local and international measures designed to suppress it.

2: Murphy G-4 (no date) 1953 AF15 East China AF15

average per-ton costs over similar distances in the same areas for ordinary goods of about £12 (US$.30 per ton/mile).[15] Tea and silk required special handling, and neither was supposed to get wet or to touch the ground during its transport.* These rates compare with an average of about £14 per ton for tea and silk over similar distances by water transport.[16] Shanghai's water connections were thus a vital advantage in securing for it the lion's share of foreign trade in these two leading commodities. Robert Fortune estimated in 1848 that transport costs for tea from the hinterland to Shanghai averaged about 50 per cent of total costs to that point, while he estimated the figure for Canton at 70 per cent.[17]

A desire on the part of the Ch'ing Government to continue the diplomatic and economic advantages resulting from the monopoly system of the Canton Cohong was apparently combined with a desire for increased revenue from the newly expanded trade with the foreigners in a movement to tax tea and silk exported via Shanghai at the same rate as would have been applied if these had moved out via the much longer route to Canton. The resulting Imperial Edict of 1845 ordering the imposition of extra transit dues on this basis had, however, only a nominal effect, since the locational advantages of Shanghai meant that the saving in transport costs and interest charges on tea and silk shipments more than made up for the additional dues.[18]

Map 9 shows the major tea-producing areas of China in the nineteenth century. The Yangtze itself runs through the northern part of the area producing the best quality teas, and its tributaries and the Chientang River (with its mouth at Hangchow, from which multiple waterways lead to Shanghai) drain most of the remainder. In spite of its river connections into this area, Wenchow was not a major tea exporter. This was certainly due in part to its relatively late opening to foreign trade, but that fact is in itself related to the high relief in Wenchow's hinterland, through which interrupted navigation provides the only adequate means of trans-

* For overland transport, they were carried in special frames mounted on porters' backs, with a supporting stick attached so that the load could be rested without being set down on the ground. For water transport, special care was taken to see that tea and silk were kept in clean dry holds or securely under cover. See Robert Fortune, *A Journey to the Tea Countries* (1852); Richtofen, *Letters to the Committee.*

3: Hinder G-5 (1933-1942) 1944 AF15 East China AF15

disposed of by the benevolent society or a public agency. The issue is at base that laboured sufficiently in preceding pages—low earnings of employed workers.

THERE IS A GROUP OF workers in Shanghai whose conditions of employment were such that the public called for special investigation of them. These are the pullers of public rickshas, one of the many groups of workers engaged in transportation—an industry which in China even prior to December 1941[3] depended more on human labour than on mechanized vehicles. The pullers of hand-carts, and those who use a pole on their shoulders for carrying loads, are also transportation workers, but there was little public interest in the latter groups, even though their work is in some respects as arduous as that of the ricksha pullers.

In 1933, at the suggestion of the Rotary Club, the Council undertook an enquiry into the working conditions of public ricksha pullers. This group of pullers does not own rickshas but hires them on a twelve-hour shift. The conviction of the community was that the pullers were being exploited by the owners of the rickshas or by their agents, sub-contractors through whom the rickshas were leased. The committee of enquiry examined the advisability of centralising the public ricksha industry in a utility company, and did in fact finally recommend that a beginning be made by the organisation of one company to operate a fleet of two thousand vehicles. The committee felt that little could be hoped for in the way of better care of vehicles and better conditions of operation for the pullers as long as the rickshas were owned by more than a thousand individuals.

It transpired that since the number of public rickshas was limited to about ten thousand, the Council's ricksha licence to operate a ricksha had acquired a fictitious value of several hundred dollars. Owners sought to recover as rent an investment return, not on the price of the ricksha and the cost of a licence, but rather on the money paid by them to the holder of a licence based on the enhanced value of the licence itself. Hence pullers were paying a rental out of all proportion to their earning capacity.

[3] After this date no further importations of gasoline took place and motor traffic disappeared largely from the streets except for vehicles on public service. Some were converted to be used with substitute fuels.

3: Hinder G-5 (1933-1942) 1944 AF15 East China AF15

A study of the livelihood of the pullers made by the Industrial Division showed that the puller had each day to pay forty-seven per cent of his earnings for the rent of his vehicle. The large number of rickshas on the streets introduced an element of competition for "fares," with the result that, after a long day's work, a puller would sometimes find himself with only enough money to pay the rent for his ricksha. Moreover, a puller cannot work every day. If he pulls as many as twenty days in the month, it is all he can do. The long hours of running demand long resting periods, at least one day in every three.

The Council adopted the Committee's recommendations that the rental should be fixed by the Council, and that, in order to form a pullers' welfare fund, a sum should be added to the rental, which owners would collect and deliver to the Council when paying for their licences. This plan was in effect an elementary form of social insurance where the puller paid all the contributions, since they came from an enlarged rental, but the necessity for meeting many kinds of need precluded adequate arrangements being made for any one of them. An organisation arose, known as the Pullers' Mutual Aid Association, with trustees appointed partly by the Council and partly by the Chinese Ratepayers' Association. The number of pullers was so large that not all could benefit from the social work. One of the largest social programmes in the Far East nevertheless came into being with the "P.M.A.A." It operated tea and bath houses, a hospital for pullers, paid expenses in other hospitals, paid funeral expenses, operated schools for pullers and for their children, and served the group in many other ways.

Pullers had to register with the police. The turnover in pullers was very considerable. A study made by the Ricksha Control Officer in July 1940 showed that only two per cent of those still pulling had been registered in 1934. In 1940 eighteen per cent were newly registered.

With rising living costs in the years after 1937, owners of public rickshas petitioned regularly for permission to increase ricksha rents. To enable them to pay higher rental charges, ricksha pullers had to earn more. At intervals, and always prior to allowing any change in the hire charges, a study was made of the earning capacity of the puller. He proved able to adjust his earnings to his increased living costs and higher rental charges to a degree at first believed impossible.